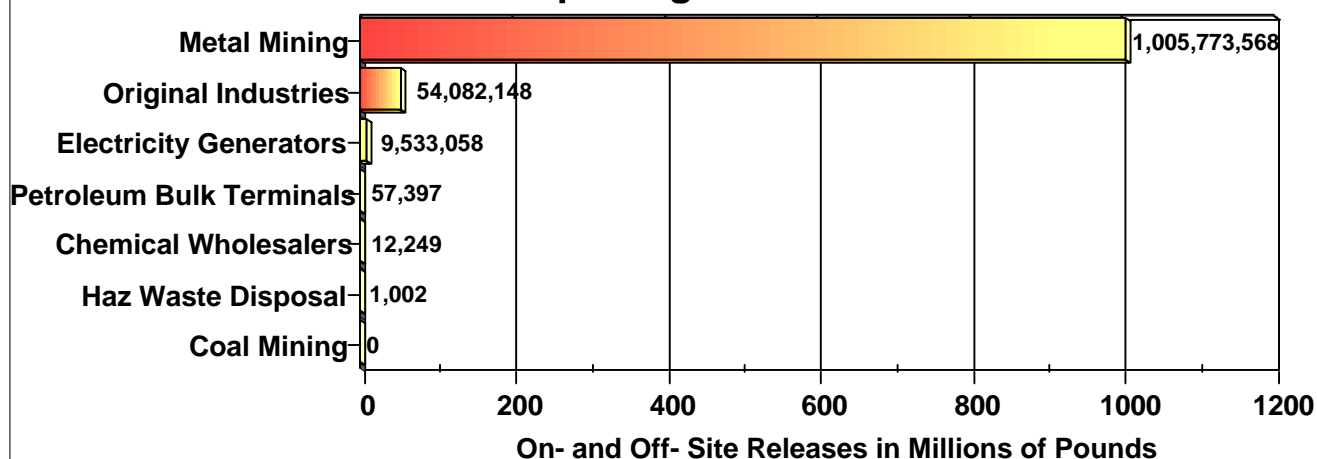




Arizona Report: 1998 Toxics Release Inventory

U.S. EPA Region 9
Arizona, California,
Hawaii, Nevada,
and the Pacific
Islands

TRI On-site and Off-site Releases* in Arizona Reporting Year 1998



The 1998 Public Data Release

EPA has just made public the 1998 data on toxic chemicals that were released to Arizona's air, water and land. This information comes from the Toxics Release Inventory (TRI) program, commonly known as community right-to-know. In addition to information from the manufacturing sector and from federal facilities, this marks the first year that data is available on seven new industry sectors. In Arizona, 251 facilities reported 1.07 billion pounds of toxic releases*.

** Release is defined as the amount of a toxic chemical released on-site (to air, water, underground injection, landfills and other land disposal), and the amount transferred off-site for disposal. When comparing data from year to year, the data is normalized to account for changes in the list of reportable chemicals and other variables.*

It is important to note that release should not be directly equated with risk. To evaluate risk, release data must be merged with information about chemical toxicity, site-specific conditions, and exposure. In addition, this data does not indicate whether a facility is violating environmental laws. Many of the substances reported through this program are subject to state and federal regulations designed to protect human health and the environment.

Original Industries - the 1998 Data

Manufacturing industries have been reporting their releases since 1987 and federal facilities started reporting in 1994. Between 1987 and 1998, releases in Arizona have risen and fallen, primarily in response to activities in the State's copper smelters. Because an activity at a single smelter can have a very large impact on the State's releases, it is difficult to conduct year to year comparisons in Arizona.

212 manufacturing facilities reported 54.1 million

pounds of toxic releases. 88% of the releases from the original industries were on-site land releases and 11% were to the air. 85% of the total releases from the original industries are from a single smelter, the Asarco Inc. Ray Complex/Hayden Smelter & Concentrator (Hayden, Gila County).

It is important to note that one facility, Cyprus Miami Mining in Claypool, has traditionally reported under the smelting category. For 1998, it also reported releases under one of the new industry categories, metal mining. Releases from Cyprus Miami increased significantly with the addition of its metal mining activities, and including this data under the manufacturing sector would skew year to year comparisons. Therefore, releases from this facility are now categorized under metal mining.

New Information—the 1998 Data

The 39 facilities reporting for the first time in 1998 accounted for 1.015 billion pounds of releases. This equates to about 95% of the State's total releases. The new sectors are: metal and coal mining, electricity generation, commercial hazardous waste treatment, solvent recovery, petroleum bulk terminals, and wholesale chemical distributors.

Metal Mining

The new industry with the greatest impact on Arizona releases is metal mining. 13 mines reported 1.006 billion pounds of releases, or 94% of the State's total releases. Arizona represents 29% of the nation's metal mining releases. An Arizona facility, Asarco, Inc., Mission Complex (Pima, AZ) ranked 3rd in the Nation for total releases from any industrial sector.

Many mines extract, move, store, process, and dispose of large amounts of waste rock and ore--materials which often contains low concentrations of naturally occurring metals. The vast majority of this material is placed in surface impoundments or on the land, and the metals are reported as on-site releases to land. This previously buried material is exposed to potential leaching by rain, snow, and acid mine drainage, and must be carefully managed and monitored to prevent any surface water or ground-water contamination. There are also air releases from ore processing and metal refining operations.

Electricity Generating Facilities

The second largest new sector for releases in Arizona is

electricity generation. 6 electricity generating facilities reported 9.5 million pounds of releases, slightly less than 1% of the State's total releases. 63% of these releases were to on-site land and 37% were to the air. The disposal of metal-containing ash to on-site landfills and air releases of acids made up the majority of this sector's releases.

Only facilities that combust coal or oil to generate electricity for distribution in commerce need to report to the Toxics Release Inventory. Both coal and oil contain metals that are released to the air when the fuel is combusted. The ash that remains after coal is combusted will also contain metals. Large quantities of this ash may be disposed of in on- or off-site landfills, or returned to coal mines for disposal there. Toxic chemicals may also be formed during the combustion process. These include zinc oxide and acid aerosols like hydrochloric acid, hydrogen fluoride and sulfuric acid.

Petroleum Bulk Terminals

10 petroleum bulk terminals reported on 57.4 thousand pounds of releases, all to the air.

These establishments are primarily engaged in the wholesale distribution of petroleum products. Chemicals releases most frequently reported were for typical constituents of gasoline, such as benzene, toluene, ethyl benzene, and xylene.

Wholesale Chemical Distributors

8 wholesale chemical distributors reported 12.2 thousand pounds of toxic releases, all of it to the air. In the course of distributing chemicals, many wholesalers repackage and sometimes reformulate their products.

Commercial Hazardous Waste Treatment and Solvent Recovery Services

2 commercial hazardous waste treatment and solvent recovery facilities reported about 1 thousand pounds of releases, mostly to the air.

Hazardous waste treatment facilities treat, store, and dispose of hazardous waste. (Note: the reporting requirements apply only to those facilities regulated by subtitle C of RCRA). Hazardous waste treatment facilities handle large quantities of materials which may contain heavy metals, asbestos and other

chemicals. Solvent recovery services collect, recycle, and redistribute solvents. Since many of the facilities are co-located with commercial hazardous waste treatment facilities, their releases were aggregated.

Coal Mining

No facilities reported in this industrial category.

Top Facilities for Releases

The top 10 facilities for on- and off-site releases in Arizona are:

- ① Asarco Inc. Mission Complex (Sahuarita, Pima County) with 336.6 million pounds
- ② Phelps Dodge Morenci Inc. (Morenci, Greenlee County) with 141.7 million pounds
- ③ Cyprus Sierrita Corp. (Green Valley, Pima County) with 129.9 million pounds
- ④ Cyprus Miami Mining Corp. (Claypool, Gila County) with 123.4 million pounds
- ⑤ Asarco Inc., Ray Complex/Ray Ops. Mine (Kearny, Pinal County) with 116.1 million pounds
- ⑥ Cyprus Bagdad Copper Corp. (Bagdad, Yavapai County) with 93.5 million pounds
- ⑦ BHP Copper N.A. San Manuel Mining (San Manuel, Pinal County) with 52.0 million pounds
- ⑧ Asarco Inc. Ray Complex/Hayden Smelter & Concentrator (Hayden, Gila) with 46 million pounds
- ⑨ BHP Copper N.A. Pinto Valley Unit (Miami, Gila County) with 8.8 million pounds
- ⑩ BHP Copper N.A. San Manuel Smelting & Refining (San Manuel, Pinal County) with 3.9 million pounds

On-line Access

For national information on data release, see <http://www.epa.gov/tri>

The TRI data is available through the Envirofacts Warehouse, EPA's premier Internet site for distributing environmental information at <http://www.epa.gov/enviro>

For general information on the Toxics Release Inventory, including reporting requirements for businesses, go to <http://www.epa.gov/region09/toxic/tri>

Information and Assistance

We will be more than happy to answer your questions and assist you in learning more about the TRI program in Region 9.

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